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Upgrading of high-viscosity naphtha in the super-critical water environment

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Abstract

© Research India Publications. Constantly growing needs of mankind for energy and chemical raw materials led to considerable exhaustion of those resources known stocks for which the combination of production low cost and high performance of use is characteristic, first of all it concerns naphtha and gas. The resources revaluation which is carried out in world fuel and energy structure balance makes an issue of heavy naphtha and native bitumen fields development timely. They are considered not so much as oil production reserve, but as the basis for its future development [1-3]. Expensive non-conventional hydro-carbonic resources development methods that are bound to their unique structures and physical and chemical properties, conditions of their bedding [4-6] are being developed around the world. The high content of aromatic hydro-carbons, pitch-asphaltenes substances, metals and sulfur compounds in high-viscosity naphtha together with the increased cokability leads to almost impossible processing according to classical schemes of the modern oil refineries, and high rates of density and viscosity make transportation through the existing oil pipelines impossible [7-8]. Thus, their economically profitable development is obviously possible only due to processing technologies development.

Keywords

Heavy naphtha, Microwave radiation, Physic-mechanical properties, Road asphalts, Vacuum residuum (tar)